

WHAT INFLUENCES EMPLOYEES TO USE ENTERPRISE SOCIAL NETWORKS? A SOCIO-TECHNICAL PERSPECTIVE

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Abstract

The adoption of enterprise social network (ESN) for greater employee engagement and knowledge sharing practices within organisations is proliferating. However, ESN investments have thus far not resulted in expected gains in organisational benefits due to underutilisation by employees. Limited understanding of the implications of ESN use leads to a paucity of recommendations for effective use within an organisation. This research-in-progress paper seeks to determine the factors influencing the use of ESN among employees in a large Australian utility organisation, with the aim of contributing to a practical understanding of the key success factors of the use of this new workplace social platform. Our preliminary findings indicated that the employees' ESN behaviour tends to be influenced by socio-technical factors, including technological (i.e. platform and content quality), organisational (i.e. top management support and ESN facilitating conditions), social (i.e. critical mass and communication climate), individual (i.e. perceived benefits, knowledge self-efficacy and time commitment) and task (i.e. task characteristics) factors. This paper concludes that a successful implementation of ESN in an organisation involves the nexus between these five factors and provides several recommendations about how ESN use can be enhanced.

Keywords: Enterprise Social Networks, Socio-Technical Factors, Use Behaviour, Usage

1 INTRODUCTION

Driven by successful embeddedness of publicly available social networking platforms (e.g. Facebook, LinkedIn and Twitter) in daily practices, many organisations are rapidly deploying similar social technology in a corporate realm - more commonly referred to as Enterprise Social Networks (ESNs). The motive of ESN deployment is to revolutionise the way employees communicate, collaborate, consume and create knowledge for greater employees' engagement and knowledge sharing practices (Berger et al. 2014a; Wang et al. 2009). However, the investments in ESN have outpaced the realisation of its benefits, as it is forecasted that approximately 80 percent of organisations will fail to gain the intended benefits of this new workplace social platform through 2015 (Mann et al. 2012). Employees' underutilisation has become one of the perennial issues for successful adoption of ESN in organisations (Denyer et al. 2011; Wagner et al. 2014). To leverage ESN investments, an understanding of both prevalence of usage and non-usage of this new workplace social platform among employees is imperative in order to provide organizational actors with practical guidelines (Leonardi et al. 2013).

Prior studies by Steinhuser et al. (2011) and Parameswaran and Whinston (2007) revealed that ESN differs from conventional organisational information technology (IT) (e.g. flexible content generation, high intuitiveness, voluntariness of use, enabling many-to-many interactions, low degree of governance and unstructured quality assurance). With such dichotomies, it has been asserted that the factors contributing to ESN and conventional organisational IT use behaviours may significantly differ and existing technology adoption theoretical frameworks may require modifications in order to explain this emergent social platform usage (e.g. Richter and Riemer (2013) and Parameswaran and Whinston (2007)). A small number of technology and contextual factors influencing ESN usage have been identified in the empirical studies of Kugler et al. (2013) and Wang et al. (2013), but there remains much to be done in understanding the factors influencing the use of ESN (Leonardi et al. 2013). Therefore, this paper aims to contribute to this research gap by answering the following research question: *What are the factors that influence the use of ESN usage among employees?* The next three sections briefly describe related studies, outline the research methodology, and present the findings. The paper ends with a conclusion and suggestions for further work.

2 RELATED WORK

Adapting the definition of van Osch and Coursaris (2013), ESN is defined as an online corporate social networking platform that facilitates organisational communication activities between management, employees and external stakeholders (e.g. customers, partners and suppliers) to foster knowledge management, social relationship building and collaborative community formation. ESN has myriad features such as status updates, micro-blogging, groups and communities, instant messaging, content management system, enterprise search, ratings, user profiles and the ability to connect with, follow, like or praise someone (Leonardi et al. 2013). Yammer, IBM Connection, Jive, Tibbr and Chatter are the current leading ESN providers (Drakos et al. 2014). Treem and Leonardi (2012) have advocated that ESN transcends other organisational communication tools such as email and blogs in its higher degree of affordances of *visibility* and *association* (of people and content) and *persistence* and *editability* (of content). Recent research also highlights that with such unique affordances, ESN prevails conventional knowledge management system (KMS) in enabling continuous organisational knowledge sharing practices (e.g. Ellison et al. (2014) and Fulk and Yuan (2013)). For instance, ESN provides employees' access to relevant knowledge of *who knows what* (i.e. expert and expertise) and *who knows whom* (i.e. connections) (Karoui et al. 2014). This *communal knowledge conversations* platform (Majchrzak et al. 2013) promotes interactions transparency within organisation and motivates the knowledge exchange among employees (Beck et al. 2014). Empirical evidence has shown the use of ESN improves team performance (Liu et al. 2014), and also individual employee work performance (Wu 2013) and commitment towards organisation (Gonzalez et al. 2013).

However, scholars like Gibbs et al. (2013) have revealed that the ESN use also creates tensions among employees (e.g. they tend to be *invisible*, *disengaged* and to *control* the knowledge and connections).

Despite of the heterogenous impact of ESN usage, individual employee use of ESN is still a topic of ongoing interest (Leonardi et al. 2013; Treem & Leonardi 2012). According to previous empirical studies, employees' ESN use behaviour tend to be motivated by various aspects of factors such as technological (e.g. relative advantage, ease of use, perceived security), organisational (e.g. leaders' support and organisational climate), social (e.g. perceived critical mass and subjective norms) and individual (e.g. reputation, computer self-efficacy and personal innovativeness) (Denyer et al. 2011; Kügler et al. 2012; Wang et al. 2013). An effective implementation of a new organisational IT such as ESN is facilitated by both technical and social subsystems, in which the *technical subsystem* refers to "the processes, tasks, and technology needed to transform inputs to outputs," and the *social subsystem* represents "the attributes of people (e.g. attitude, skills, values), the relationship among people, reward systems and authority structures" (Bostrom & Heinen 1977, p. 17). In other words, how successful ESN is adopted and used in organisations depends on the reciprocity interaction between the technology, employees and the organisational and environmental context in which it is embedded (Gonzalez et al. 2013; van Osch & Coursaris 2013). While the socio-technical approach has been utilised to gain insights into factors contributing to various organisational work systems such as decision support system (Mackrell et al. 2009) and IT governance (Chong & Tan 2012), few have used socio-technical as underlying theoretical lens to study ESN. Thus, this study proposes to envisage ESN as a social-technical system to have a deeper understanding of what constitutes an effective ESN use from both technical (e.g. technology and task) and social (e.g. organisation environment and employees) subsystems perspectives and the interactions between them.

3 RESEARCH METHODOLOGY

Given that the ESN use within organisation is an emerging phenomenon with lack of comprehensive explanation from the theoretical and practical perspectives, mixed methods design is a powerful mechanism to examine such phenomenon (Venkatesh et al. 2013). This study will undertake a *sequential exploratory mixed-methods* design: a qualitative method (i.e. semi-structured interviews) to unearth the factors influencing employees to use ESN, followed by a quantitative method (i.e. survey) to confirm and generalise the discovered factors. As our study seeks to explore the factors influencing employees' use behaviour towards ESN, it is important to collect data within organisation that had adopted the workplace social platform. In this paper, we presented the preliminary interview results in a large Australian utility organisation, which we referred as "Delta". Formed in mid-1990s and with 2,600 employees, Delta provides portable drinking water, wastewater and storm water services. Delta has implemented *Yammer* as their ESN platform since 2012.

Prior to conducting the interviews, we had a telephone conversation with the head of the Internal Communication Division to explain the aim of the study, the purpose of the interview and the criterion of the interviewees. Based on Rubin and Rubin (2011)'s concept of triangulation of subjects, we aimed to have balance mix of different types of ESN users (i.e. who is seen actively or passively participating, responding and contributing posts per week) in order to understand what factors encourage or inhibit their ESN use behaviour. We conducted semi-structured interviews with seven Delta employees (see Table 1 for their demographics). The interviewees' ESN user categories are classified based on their frequency of monitoring and/or responding and contributing posts within a week. Each interview lasted an average of 40 minutes and was recorded and transcribed verbatim. We coded and analysed the transcripts using MAXQDA 11. Using the *open coding* technique (Corbin & Strauss 1990), we constructed the initial themes according to the ESN use practices and socio-technical factors influencing the use. Following this, we used "axial coding" to analyse the catalogue of initial themes and assemble according to their relationships.

Participant	Role	Job Tenure	Public SNSs User Type	ESN User Type
DU01	Senior Major Project Officer	1 to 5 years	Active	Active
DU02	Communication Advisor	1 to 5 years	Active	Active
DU03	IT Project Manager	More than 5 years	Passive	Passive
DU04	Senior Community Relations' Advisor	More than 5 years	Active	Passive
DU05	Communication and Engagement Specialist	1 to 5 years	Active	Active
DU06	Digital Marketing Advisor	1 to 5 years	Active	Active
DU07	Business IT Manager	Less than 1 year	Active	Passive

Legend: Public SNSs: Public social networking sites such as Facebook, LinkedIn and Twitter

Active: Individual who regularly uses the social platform (i.e. consistently monitors, responds and contribute posts per week)

Passive: Individual who occasionally uses the social platform (i.e. intermittently monitors, responds and contribute posts per week)

Table 1. Demographics of Participants

4 FINDINGS

According to DU01, based on Delta's ESN report, more than 75% of the 2,600 Delta employees have reportedly signed up for Yammer account and only approximately 30% of the accounts are reported as actively posting and contributing content. However, DU01 highlighted that the value of ESN use is not limited to actively posting and contributing users but also actively monitoring users.

4.1 Purposes of ESN Use Within Delta

From the interview data, ESN plays a pivotal role as a "one-stop-centre" for increased organisational awareness among employees on both formal and informal matters. ESN provides them a means of gaining insights into what is happening in Delta and the activities other employees are involved with (DU02, DU03, DU04, DU05, DU06). Moreover, according to four active users (DU01, DU02, DU05, DU06), ESN is an effective problem-solving platform. When they have task-related problems, they will post a question to the platform and receive the correct information quickly. Apart from receiving the correct information, they could also be directed to the right person or expert who can help them solve their problems. ESN has also been used to gather ideas from other employees and to share information about collaborative work with other employees. Three interviewees (DU03, DU04, DU05) mentioned they enjoy the sense of connectedness using ESN because this platform enables them to establish interpersonal relationship with other employees within the organisation (people they do not usually work with) and to maintain existing relationships. In addition, ESN provides a link between the executive and senior management (e.g. managing director) and employees (DU01, DU02, DU07). Employees can, therefore, easily connect to the top management through the ESN platform. ESN also helps employee to relax and take a break from work (DU05). Our findings suggest that the use of ESN within Delta is driven by utilitarian (i.e. to improve employees' task performance) and hedonic (i.e. to give employees a relatedness and enjoyable user experience) purposes.

4.2 Socio-Technical Factors Influencing ESN Use

Drawing on Bostrom and Heinen (1977)'s socio-technical perspectives, we presented the identified factors influencing the employees' ESN behaviour within Delta into five dimensional factors: *technological* and *task* (technical subsystem), and *organisational*, *social* and *individual* (social subsystem) (see Figure 1). *Technological factors* refer to the characteristics of ESN platform and its outputs, while *task factors* are associated with the tasks characteristics supported by ESN. *Organisational factors* relate to the organisational processes and environment that impact the use of ESN. *Social factors* denote the various social processes and mechanisms that guide an individual to formulate perceptions of ESN usage and *individual factors* refer to individual employee characteristics that can influence their ESN usage behaviour.

4.2.1 Technological Factors

The simplicity and similarity of ESN with other private SNSs contribute to ease of use; an important factor as affirmed by four interviewees (DU01, DU02, DU04, DU06). Three active ESN users (DU01, DU02, DU06) also emphasised that the ability to access the platform 24/7 using ubiquitous computing devices (e.g. Android and iOS devices) positively influences the usage. The integration of ESN into Delta's main Intranet homepage to increase the visibility of platform usage has also emerged as an enabling technological factor. On the other hand, two interviewees also mentioned the limited functionalities available in the ESN as an influential factor. Apart from having social networking tools such as groups, file sharing and asking questions, DU03, a passive ESN user, does not see any ESN functionalities that could be incorporated into business processes. In addition, DU02, an active ESN user, highlighted the limited features in Yammer mobile app.

Three interviewees (DU03, DU04, DU06) emphasised that the importance of work-related content and conversations (e.g. career development and employees' achievement) driving the ESN use. On the other hand, the irrelevant and non-work related content (e.g. religious matters and selling items) tends to discourage employees to use ESN (DU01, DU02, DU03). Three passive ESN users (DU03, DU04, DU07) highlighted that the lack of response to their contribution on ESN stops them use the platform. While one of the useful functionalities of ESN is to allow users to freely provide feedback and contribute ideas regardless of their position and status within the organisation hierarchy, DU07 mentioned that the lack of reputability of content also affects ESN use.

4.2.2 Organisational Factors

Six interviewees (DU01, DU02, DU04, DU05, DU06, DU07) agreed that top management support and engagement in ESN escalate the employees' usage and enable the flow of good conversation and content. The visibility of senior management involvement also creates an impression that ESN use is valuable and not a time-waster for other senior managers and employees. However, many of the senior managers in Delta remain sceptical about the use of ESN. According to DU01 and DU03, these sceptical senior managers do not only refuse to use ESN but also prohibit (or strongly discourage) the use of ESN among their staffs. This contributes to the low usage because employees do not feel comfortable posting while 'Big Brother is watching' (DU06). The ESN use requires a paradigm shift in leaders and they may feel nervous and intimidated by the loss of control (DU01). DU03 revealed an incident where DU03 and colleagues were rebuked by their managers for liking or commenting on a post on ESN. The attitude of the sceptical leaders contributes to the existence of silos between the leaders and the employees who report to them; thereby, amplifying the hierarchical organisation culture and inhibiting the ESN use.

Delta has a community manager to manage the content contributed to ESN, to ensure that all questions are answered and referred to the right person, and also to trigger conversation. The presence of the community manager has ensured the ESN content quality and appropriate use (DU01, DU02, DU06). There is an ongoing awareness programmes regarding ESN usage within Delta (DU01, DU02, DU06). For example, ESN use is consistently promoted through internal communication channels such as weekly e-newsletter and new staff induction program. Moreover, campaigns such as Recognition Day (DU02) and competitions (DU06) are regularly initiated on ESN to enhance employees' engagement. Delta has also established training and education sessions for employees to educate and explain the benefits of ESN usage (DU02). Two interviewees (DU01, DU02) mentioned that a reward system such as incentives and prizes for the best contributions and ideas is also vital to increase ESN use.

4.2.3 Social Factors

While ESN is innately social, employees will most likely feel encouraged to use ESN if the number of users in the network increases. However, the small population of engaging users - which causes ESN to be dominated by certain individuals who contribute content and respond regularly - emerged as a significant barrier to ESN use (DU03, DU04, DU05, DU06, DU07). The composition of Delta's

employee demographic has emerged as an influential social factor. For example, four interviewees (DU02, DU03, DU04, DU05) highlighted the ageing workforce of Delta to be a challenge to ESN adoption. The older employees who are not familiar with the social networking culture and technologies have difficulties to understand the benefits of these technologies within a formal organisation setting. While ESN is an informal communication tool, the aging workforce has the mindset that ESN is just for fun and entertainment or time-waster. Moreover, Delta has been outsourcing work to other companies over the years. The outsourced contract managers who work project-based, often feel that they do not belong to the organisation and they are, therefore, reluctant to use ESN (DU03, DU04). Despite these factors contributing to the lack of ESN critical mass, the presence of enthusiastic employees championing the ESN use emerged as a driver (DU07). They actively contribute useful content and constantly nudging other employees to use ESN.

The shared perception of the ESN environment by a group of employees (or ESN communication climate) emerges to be a significant social factor. ESN stimulates social interaction among all employees, regardless of their position and status in the organisational hierarchy, and thus promotes the sense of connectedness (DU01, DU04, DU06, DU07). Such a sense of connectedness offered by ESN builds positive feelings of attachment among employees. In addition, DU01 and DU07 revealed that they feel free to voice positive or negative opinions on the ESN platform without criticism. The free expression of voice on ESN has an influence on employees' perceived value of ESN use. While the positive climate promotes the use, the sceptical climate such as shared 'social hallucination' in Delta that employees who regularly engage on the social platform are lazy and negligent seems to be an inhibitor (DU03, DU06, DU07). While Delta's MD is an active ESN user, DU03 perceives that the platform is used as a political tool by certain sanctimonious users to 'like' every posts that the MD contributes to the platform. The communication style used in ESN also emerged as an influential factor (DU02, DU03, DU05, DU07). The personal and casual communication style makes most employees feel comfortable to have conversations on the platform and they also feel connected to the other employees, which increases the usage; and formal communication style and command-and-control messages act as a barrier to ESN use and limit participation.

4.2.4 Individual Factors

Six interviewees (DU01, DU02, DU03, DU04, DU05, DU06) confirmed that the enjoyment of helping others through sharing information and answering questions posted to ESN is a strong individual motivator. However, not all employees are willing to share their knowledge without getting something in return. Five interviewees (DU01, DU02, DU05, DU06, DU07) also mentioned the ESN usage can increase the visibility of their expertise and, thus, enhance their reputation and profile in the organisation, which appears to be a motivator. Organisational transparency afforded by ESN can, however, impede employees' use of the platform due to lack of confidence in their contribution, as revealed by six interviewees. Individual employee fears being seen as dumb by posting something that might not be valuable, be time wasting, incorrect or badly written. Two interviewees (DU03, DU06) revealed that the lack of familiarity with the social networking tools among older population of employees is also an influential factor to ESN adoption. Employees who have no ESN experience are reluctant to invest the time and effort required to use it, as they do not know what to post and share on the platform. One key challenge impeding employees' ESN use is lack of time (DU02, DU03). While employees who work in the office may sit comfortably and monitor and contribute contents on the ESN, employees who work 'in the field' have limited time to engage in ESN.

4.2.5 Task Factors

From a task perspective, one active ESN user (DU05) mentioned that the ability of ESN to contribute towards uncertain and difficult tasks influences its adoption. Due to high visibility and association affordance, ESN supports task uncertainty, as employees can ask whether anyone has done a similar task before. The responses have often been useful and other employees often direct them to relevant resources. On the other hand, DU05 and DU07 claimed that these ESN affordances also create tension

for employees, as it demands additional tasks that may not be linked to their key performance areas. Employees are likely not to use ESN given the additional task pressure.

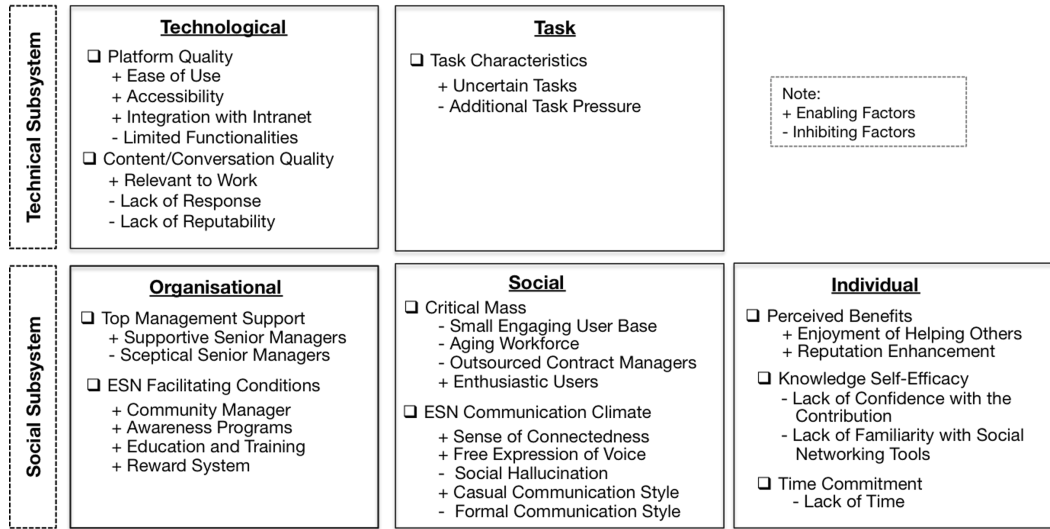


Figure 1. Identified Socio-Technical Factors Influencing ESN Use

5 DISCUSSION

This research-in-progress finding is consistent with those of our previous studies (i.e. Chin et al. (2015a) and Chin et al. (2015b)) and elucidates that successful ESN adoption is contingent on how organised the organisation environment is at the *technological, organisational, social, individual* and *task* (or TOSIT) levels. From the *technological* perspectives, how the organisation activates the ESN platform (which includes creating a user-friendly experience such as easy to use and access), crafts ESN content to be useful and credible and provides timely feedback to each ESN contribution are vital. While system quality and information quality have been recognised as salient factors that influence KMS success (Kulkarni et al. 2007), our study also corroborates this assertion. We hereby propose, “*The higher the quality of ESN platform and content activated, the greater the use of ESN will be.*”(Proposition 1)

At the *organisational* level, we assert that the alliance between top management support and the availability of ESN facilitating conditions (e.g. community manager, campaigns, education) is the key driver to boost the ESN use. For example, active participation of ESN among senior managers indicates legitimacy of the platform. Furthermore, having a community manager take responsibility in ensuring that every question posted on ESN is responded to or directed to the right people, drives and maintains the creation of quality of content and conversations and enhances employees’ engagement. While senior management involvement is crucial, providing education and training for leaders also implicitly encourages employees’ use. This finding is consistent with prior studies (e.g. Kuo and Lee (2011) and Bock et al. (2006)), which acknowledged that *top management support* and *facilitating conditions* are significant contributors for KM system use. We therefore propose, “*The more supportive top management and better perceived ESN facilitating conditions, the greater the use of ESN will be.*”(Proposition 2)

From the *social* perspective, the perception of critical mass and communication climate (i.e. how things are done and how employees treat each other) of ESN plays a pivotal role in augmenting its use. For example, when there is enough employees and organisational knowledge can be reached through ESN, the value of the platform use will increase, as suggested by the theory of network externalities (Katz & Shapiro 1986). The critical mass of value-adding users (i.e. senior managers and experts) is also crucial to ensure the flow of quality content and increase the value of contributions to the ESN (see Berger et al. (2014b)). In addition, a positive ESN communication climate where employees are

encouraged to communicate their opinions and ideas, build and maintain relationships with other employees without discrimination based on rank or job title, as well as a personal and informal communication style used is also more likely to increase its use. Previous studies have corroborated that the ESN climate (e.g. innovative, collaborative and affiliation climate) (e.g. Boh and Wong (2013); Kügler et al. (2012)) and communication style (e.g. Risius (2014)) have a significant impact on employees' use of ESN. Thus, we propose, "*The higher the critical mass and positive communication climate of ESN, the greater the ESN use will be.*" (Proposition 3)

At the *individual* level, employees' ESN behaviour is based on self-interest (i.e., enjoyment of helping others and reputation enhancement), knowledge self-efficacy and time commitment. Previous studies (e.g. Kankanhalli et al. (2005), Ye et al. (2006) and Stewart and Osei-Bryson (2013)) have reported that external benefit such as *reputation* and intrinsic benefits such as *enjoyment of helping others* and *knowledge self-efficacy* have a positive influence on individuals' knowledge contributions to KMS. It could be concluded that employees' motivation to use ESN is contingent on the overall culture of knowledge sharing within organisation (e.g. how they view knowledge either as public or private good). However, *time commitment* has appeared to be a significant challenge to the use of ESN for exchanging knowledge (see also Connelly et al. (2014)) that needs to be addressed. In summary, we propose, "*The stronger the knowledge sharing culture of the organisation, the greater the use of ESN will be.*" (Proposition 4)

At the *task* level, we found that ESN supports tasks that lack adequate information or instructions (i.e. equivocal tasks) and employees are often provided with the right information and people when they post their work-problem questions. As Koo et al. (2011) suggested, task characteristics (e.g. analysability, urgency and complexity) have a pivotal role in influencing the social communication usage among employees. However, the easiness to ask any questions and associate the problems to certain people on ESN also creates tension towards its use. We hereby propose, "*The fitter task characteristics to ESN, the greater the use of ESN will be.*" (Proposition 5)

6 CONCLUSIONS AND FURTHER WORK

While the use of a social networking platform within a formal organisational setting is still at nascent stage, ESN has novel affordances or capabilities that support knowledge creation and sharing at both individual and organisational levels (Ellison et al. 2014). Although ESN offers new possibilities, new rules and new modes of communication (Ulmer & Pallud 2014), effective deployment of this social platform in a formal organisational setting is not a straightforward exercise and requires special attention. We believe that capturing the socio-technical factors that shape its usage is a stepping-stone to understanding employees' use behaviour. This paper proposes that organisations implementing an ESN platform should involve senior management and key users from various departments, in order to leverage the use of ESN. Furthermore, careful attention must be paid to senior management beliefs and attitudes towards ESN and their communication style. Successful organisational change initiatives such as ESN adoption necessitate a new genre of 'virtual' leadership (or leadership 2.0) (Richter & Wagner 2014). Moreover, organisations should identify and empower active ESN 'advocates' as ambassadors to boost the critical mass of ESN. Linking ESN usage to employees' goals, performance and rewards will also empower them to use the technology to accomplish their work-related tasks. Lastly, organisation should stimulate personal relationships between employees through initiating events on ESN (e.g. YamJam in Delta's case). To create a culture that values ESN, organisations should create a warm and conducive ESN climate for employees to openly share personal information or knowledge on the platform in a 'work-only' environment. As our findings are based on a relatively small number of interviews, we are cautious in generalising the findings to other types of organisations and ESN platforms. Our data analysis is still in progress and the next steps include conducting an online survey in organisations that implement ESN. Findings from the qualitative research will be used to design the survey. Collectively, the findings from the semi-structured interviews and survey will allow us to identify and/or validate the salient socio-technical perspectives of ESN use.

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